RESEARCH PROBLEM STATEMENT #TS-518

I – Problem Title
Radar Detector Evaluation and Calibration System (2004Mob.25)

II – Research Problem Statement
The Division of Traffic Operations has developed an "end-use" specification for Radar units but has no way test, validate, or enforce it. A testing and evaluation system needs to be developed and deployed to all districts.

III – Objective
Develop a portable, quick setup, method of accurately evaluating Radar detector stations as per Traffic Operation's specifications, test it, and deploy it in every district.

IV – Background
Caltrans has installed hundreds of Radar detectors, many of which are not working, and few of which appear to be working well. Private vendors have now been licensed to install hundreds more on Caltrans ROW, exacerbating the situation. There is no method to inspect and approve the vendor installation. See Section VII below for related research background.

V – Statement of Urgency and Benefits
Caltrans needs to assure that all existing and new radar stations generate the maximum possible accuracy with known consistency, as per Operations Specifications. Although this system may be developed by a contractor, all source code and the development environment must be turned over to Caltrans, so that Caltrans "owns" the testing system and can modify it as necessary along with the testing specification.

VI – Related Research
There has been some internal work to develop the Traffic Operations Radar Specification, experiment with Radar units at the Irvine Detector Testbed (I-405). Also, the Division of Research and Innovation (DRI) has internally developed a lab-tested method of calibrating and testing Radar units. This project would be a continuation of DRI's work.

VII – Deployment Potential
Essential. Without a way of testing Operations' Radar specification, current stations will be underutilized and new stations will just add more ambiguity rather than clarity to the TMS. The benefit will be realized with more effective inspection of Radar sensor installations and better data from installed Radar sensors.